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## (54) GEL-FORM COSMETIC

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To provide a gel cosmetic that can retain comfort-sensing heat suitable for skins for many hours by mixing it with water or a water-containing preparation.

**SOLUTION:** The objective gel cosmetic characteristically comprises 40-75 wt.% of polyethylene glycol, 20-55 wt.% of glycerol and carboxyvinyl polymer.

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**Claims Only Translation of JP 2001-335429****Title of the Invention: A Gel-like Cosmetic Material****Claims**

**[Claim 1]** A gel-like cosmetic material characterized in that it is comprised of 40 to 75 weight % of polyethylene glycol, 20 to 55 weight % of glycerol and carboxyvinyl polymer.

**[Claim 2]** A gel-like cosmetic material as described in Claim 1 characterized in that the number average molecular weight of the aforementioned polyethylene glycol is 200 to 600.

**[Claim 3]** A gel-like cosmetic material as described in Claim 1 or 2 characterized in that one or more substances selected from ethylene glycol, diethylene glycol, triethylene glycol and propylene glycol is compounded.

**[Claim 4]** A gel-like cosmetic material as described in any one of Claims 1 to 3 characterized in that a basic compound is compounded.

**[Claim 5]** A gel-like cosmetic material as described in Claim 4 characterized in that the aforementioned basic substance is triethanolamine and/or diisopropanolamine.

**[Claim 6]** A gel-like cosmetic material as described in any one of Claims 1 to 5 characterized in that heat is generated by using it together with water or a preparation containing water.

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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

#### [0001]

[The technical field to which invention belongs] The purpose is in offering the charge of gel-like makeup which can maintain the sense-of-heat heat which was suitable for the skin with mixture with the tablet containing water or water for a long time, and can be produced about the charge of gel-like makeup which it generates heat when this invention is used with the tablet containing water or water in more detail about the charge of gel-like makeup, and produces sense-of-heat heat.

#### [0002]

[Description of the Prior Art] Various effects, such as improvement in the removal efficiency of the dirt by various effects, for example, the recovery from fatigue by circulation promotion, activity of metabolism, and extension of pore, can be acquired by giving sense-of-heat heat to the skin. Moreover, when softening hair, such as a mustache, with sense-of-heat heat at the time of a shaving, it can shave and effects, such as improvement in the taste and razor progress, can also be acquired. For this reason, the various creation of the charges of sense-of-heat makeup, such as a charge of washing its face which can generate heat when it applies to the skin from the former, a pack agent, and a shaving agent, is carried out.

[0003] In such a charge of sense-of-heat makeup, heat of hydration is used from the former as a means of fields, such as safety to the skin, and quiet of generation of heat, to generation of heat, and alcohols and polyhydric alcohol have been used as matter which produces heat of hydration. The charge of sense-of-heat makeup which generates heat when alcohol and the sorbitol ether are contained in JP,6-80534,A and it mixes with water to it as an example which used alcohols and polyhydric alcohol as matter which produces heat of hydration is indicated. Moreover, the charge of sense-of-heat makeup which generates heat when average degree of polymerization contains a poorly soluble hydrophilic high molecular compound to the polyethylene glycol of 200-1000, an activation zeolite, and a polyethylene glycol and is mixed with water is indicated by JP,6-100411,A. As a poorly soluble hydrophilic high molecular compound, a polyvinyl pyrrolidone, polyvinyl alcohol, a polyacrylamide, carrageenan, xanthan gum, gelatin, the dextrin, the methyl cellulose, the hydroxyethyl cellulose, etc. are illustrated to the polyethylene glycol.

[0004] However, when it applied to the skin to the sorbitol ether, an activation zeolite, or a polyethylene glycol which was described above in the case of the charge of sense-of-heat makeup using the poorly soluble hydrophilic high molecular compound, a feeling of a rough deposit arose and the trouble of being inferior to a feeling of use existed.

[0005] And in the case of the charge of sense-of-heat makeup using alcohols and polyhydric alcohol as a means of generation of heat, in order to mix alcohols and polyhydric alcohol with water easily, generation of heat was completed for a short time, and the trouble that it could not continue to the skin for a long time, and sense-of-heat heat could not be given also existed. However, it is the most desirable means from the field of the safety to the skin to use the heat of hydration of alcohols or polyhydric alcohol as a means of generation of heat. Then, when alcohols and polyhydric alcohol are used as a means of generation of heat, blending a thickener is performed so that it may continue for a long time and sense-of-heat heat can be given. This is because the rate of mixing with alcohols, polyhydric alcohol, and water decreases by blending a thickener and considering as the hyperviscous charge of sense-of-heat makeup.

[0006] The charge of sense-of-heat makeup in which combination of a thickener is performed and which blended the anionic high molecular compound with JP,11-12126,A as a thickener with the glycerol or the diglycerol as an example is indicated. Moreover, the charge of sense-of-heat makeup which blended the anionic high molecular compound with a glycerol and high-polymer polyoxy ethylene oxide as a thickener is indicated by JP,5-229926,A.

[0007]

[Problem(s) to be Solved by the Invention] However, the problem as shown below existed also in the charge of sense-of-heat makeup which blended the above-mentioned thickener. That is, since a polyethylene glycol with large calorific value cannot be used when blending the carboxyvinyl polymer which are a thickener, especially the thickener excellent in product stability and preparing the hyperviscous charge of sense-of-heat makeup, the glycerol with small calorific value is used like the above-mentioned example of quotation. This reason is that it cannot obtain sufficient viscosity in a polyethylene glycol even if a problem is in the solubility of thickeners, such as a carboxyvinyl polymer to a polyethylene glycol, and it cannot consider as the hyperviscous charge of sense-of-heat makeup but it dissolves.

[0008] Then, in addition to the polyethylene glycol, when they continued research wholeheartedly, by blending a glycerol, this invention persons could prepare the hyperviscous charge of makeup by thickeners, such as a carboxyvinyl polymer, found out that it could continue for a long time and could generate heat, and, for this reason, resulted in completion of this invention.

[0009]

[Means for Solving the Problem] Invention concerning a claim 1 relates to the charge of gel-like makeup characterized by the bird clapper from 40 - 75% of the weight of a polyethylene glycol, 20 - 55% of the weight of a glycerol, and a carboxyvinyl polymer. Invention concerning a claim 2 relates to the charge of gel-like makeup according to claim 1 characterized by the number average molecular weight of the aforementioned polyethylene glycol being 200-600. Invention concerning a claim 3 relates to the charge of gel-like makeup according to claim 1 or 2 which one or more sorts chosen from ethylene glycol, a diethylene glycol, a triethylene glycol, and a propylene glycol are blended, and is characterized by the bird clapper. Invention concerning a claim 4 relates to the claim 1 which a basic compound is blended and is characterized by the bird clapper, or the charge of gel-like makeup of any of 3, or a publication. Invention concerning a claim 5 relates to the charge of gel-like makeup according to claim 4 to

which the aforementioned alkali is characterized by the bird clapper from a triethanolamine and/or a diisopropanolamine. Invention concerning a claim 6 relates to the claim 1 characterized by generating heat, or the charge of gel-like makeup of any of 5, or a publication by using it with the tablet containing water or water.

[0010]

[Embodiments of the Invention] As for the charge of gel-like makeup concerning this invention, the polyethylene glycol, the glycerol, and the carboxyvinyl polymer are blended as an indispensable component. This is because it can become possible to thicken by the carboxyvinyl polymer considered to be impossible, and to prepare in the shape of gel conventionally, it can continue for a long time for this reason and sense-of-heat heat can be produced by adding a glycerol in the charge of sense-of-heat makeup containing the polyethylene glycol with large calorific value. Hereafter, the charge of gel-like makeup concerning this invention is explained in full detail.

[0011] A polyethylene glycol is blended with the charge of gel-like makeup concerning this invention as first indispensable component. This is because the amount of heat of hydration produced from a polyethylene glycol is large compared with the matter which produces other heat of hydration. In addition, although especially the number average molecular weight of a polyethylene glycol is not limited, it is desirable that it is 200-600. This is because neither of the cases is desirable since calorific value sufficient by less than 200 may not be obtained, and sufficient calorific value may not be similarly obtained even when larger than 600.

[0012] As for the loadings of a polyethylene glycol, it is desirable to prepare preferably, 40 to 75% of the weight, among the charge whole quantity of makeup, so that it may become 40 - 65 % of the weight. This is because neither of the cases is desirable since thickening by combination of a thickener is not performed good, in order that the loadings of the glycerol mentioned later may decrease relatively, if good sense-of-heat heat cannot be obtained and it blends exceeding 75 % of the weight, when it mixes with water, in order that the loadings of a polyethylene glycol with large calorific value may decrease, when the loadings of a polyethylene glycol are less than 40 % of the weight.

[0013] At the charge of gel-like makeup concerning this invention, the carboxyvinyl polymer which is a thickener is blended as second indispensable component. This is because the thickening effect of a carboxyvinyl polymer is high, it excels in product stability and it moreover excels also in the feeling of use after thickening. A carboxyvinyl polymer is water-soluble polymer which has a carboxyl group, and is mainly the polymer of an acrylic acid. As for the loadings of a carboxyvinyl polymer, it is desirable to prepare more preferably, 0.3 to 1.0% of the weight, among the charge whole quantity of makeup, so that it may become 0.5 - 0.7 % of the weight. This is because neither of the cases is desirable since it may deposit without dissolving, if viscosity sufficient in less than 0.3% of the weight of a case is not obtained and it blends mostly from 1.0 % of the weight.

[0014] The carboxyvinyl polymer which is a thickener is white acid powder, and pH of the 1% solution is about 3. A carboxyvinyl polymer can prepare various mucus with which viscosity differs by neutralizing using a basic compound. In this case, especially the basic compound used is not limited but can illustrate a triethanolamine, a monoethanolamine, a diisopropanolamine, a triethylamine, a sodium hydroxide, etc. It is desirable to use a triethanolamine and a diisopropanolamine especially. Although what is

necessary is just to adjust suitably so that especially the loadings of a basic compound may not be limited but the viscosity of the charge of makeup may become suitable within the limits, in the usual case, it is good among the charge whole quantity of makeup to make it become 0.3 - 1.0 % of the weight more preferably 0.1 to 1.5% of the weight.

[0015] At the charge of gel-like makeup concerning this invention, a glycerol is blended as third indispensable component. It was impossible to have blended a carboxyvinyl polymer with the charge of sense-of-heat makeup using the polyethylene glycol with large calorific value as a thickener conventionally. Even if this has a problem in the solubility of the carboxyvinyl polymer to a polyethylene glycol and it dissolves, the thickening effect cannot be demonstrated in a polyethylene glycol, but for this reason, thickening by the carboxyvinyl polymer is because it was difficult. On the other hand, in this invention, it became possible by blending a glycerol to prepare thickening, the shape of i.e., gel, using a carboxyvinyl polymer in the charge of makeup which blended the polyethylene glycol.

[0016] Although especially the loadings of a glycerol are not limited, it is desirable to prepare 20 to 55% of the weight, among the charge whole quantity of makeup, so that it may become 25 to 45 weight preferably. Since thickening by combination of a thickener is not performed good when the loadings of a glycerol are less than 20 % of the weight, this If it blends exceeding 55 % of the weight since it is inferior also to the adhesion to the skin and, while it is inferior to the durability of sense-of-heat heat, in order that the loadings of a polyethylene glycol with large calorific value may decrease relatively When it mixes with water, good sense-of-heat heat cannot be obtained, but it is because it is not desirable when it is any.

[0017] In the charge of gel-like makeup concerning this invention, one sort chosen from the group of ethylene glycol, a diethylene glycol, a triethylene glycol, and a propylene glycol by request as a soluble assistant of a carboxyvinyl polymer or two sorts or more can be blended. Although especially these loadings are not limited, it is good among the charge whole quantity of makeup to make it become 30 or less % of the weight.

[0018] in addition, as a purpose which adjusts the heating value which a polyethylene glycol and a glycerol emit in this invention Other alcohols, polyhydric alcohol, for example, ethanol, 1-propanol, 2-propanol, 1-butanol, 2-butanol, a sec-butanol, A tet-butanol, benzyl alcohol, a benzyloxy methanol, Benzyloxy ethanol, a methyl carbitol, an ethyl carbitol, A propyl carbitol, a butyl carbitol, a methyl cellosolve, ethylcellosolve, A butyl cellosolve, a dipropylene glycol, an isopropanal pyrene glycol, A butylene glycol, a pentene glycol, a hexylene glycol, a sorbitol, a polypropylene glycol, etc. can be suitably blended within limits by which the effect of this invention is not spoiled arbitrarily.

[0019] In addition, as a component which can be blended with the charge of gel-like makeup concerning this invention, oily raw materials, such as fats and oils, lows, a hydrocarbon, a higher fatty acid, higher alcohol, ester, and silicon oil, alcohol, various surfactants, an ultraviolet ray absorbent, an antioxidant, pH regulator, a sequestering agent, antiseptics, an antimicrobial agent, a moisturizer, a refrigerant, natural extractives, coloring matter, perfume, etc. can be blended arbitrarily suitably.

[0020] What is necessary is not to limit especially the pharmaceutical form of the charge of gel-like makeup concerning this invention, but just to be able to expect the various effects over the skin, scalp, etc. at the time of use by giving the sense of heat to the usual charge of makeup. For example, a cleaning agent, the charge of washing their face, the

charge of skin care makeup, the charge of hair makeup, the charge of body makeup, the charge of shaving makeup, etc. can be illustrated. Moreover, in order to use the charge of gel-like makeup concerning this invention, it mixes with the tablet containing water or water, and uses. By mixing with the basis containing water or water, sense-of-heat heat can be produced by the polyethylene glycol and the glycerol, and it can carry out. In addition, it is also possible not to mix with the basis containing water or water, but to use it, applying to the direct skin. In this case, sense-of-heat heat can be produced with the moisture in the skin or on the skin.

[0021]

[Example] Hereafter, although this invention is explained in detail based on an example, this invention is not limited to these examples.

(Manufacture of the sample of an example and the example of comparison) According to the composition shown in the after-mentioned table 1, each sample of examples 1-4 and the examples 1-5 of comparison was prepared. In addition, the unit of the numeric value in the after-mentioned table 1 is weight %, and "PEG" is a polyethylene glycol.

[0022] (Example of examination 1; sense-of-heat examination when mixing with water) the examples 1-4 and the examples 1-5 of comparison in which ball size carried out [ above-mentioned ] manufacture -- for a palm -- 1ml water -- in addition, it applied to eight special panelists' arm, organic-functions evaluation of the grade of the sense of heat was carried out in the following five stages, and the average was calculated

<Error criterion> 1 ... Weak 2 [ ... A little weak 3 ] [ ... 4 which can be called neither ] [ ... 5 / a little strong ] / ... When the strong average is less than / 1 or more / two, x (it is inferior) and the case of less than / 2 or more / 3.5 make O (it excels) and the case of 3.5 or more O (it excels very much), and show the result in the after-mentioned table 1.

[0023] (Example of examination 2; durability examination of the sense of heat) In accordance with the following criteria, it evaluated about the durability of the sense of heat simultaneously at the time of evaluation of the above-mentioned example 1 of an examination.

<Error criterion> 1 ... 2 which is not [ ... 3 which is not not much ] [ ... 4 which can be called neither ] [ ... It is certain 5 a little. ] [ ... When a certain average is less than / 1 or more / two, x (it is inferior) and the case of less than / 2 or more / 3.5 make O (it excels) and the case of 3.5 or more O (it excels very much), and show the result in the after-mentioned table 1. ]

[0024] (Example of examination 3; attachment assay to the skin) The adhesion over the skin of each sample was simultaneously evaluated in accordance with the following error criteria at the time of evaluation of the above-mentioned example 1 of an examination.

<Error criterion> 1 ... 2 [ bad ] [ ... 3 / a little bad ] / ... 4 which can be called neither / ... A little good 5 / ... When the good average is less than / 1 or more / two, x (it is inferior) and the case of less than / 2 or more / 3.5 make O (it excels) and the case of 3.5 or more O (it excels very much), and show the result in the after-mentioned table 1.

[0025] (Example of examination 4; examination of the sense of incongruity to the skin) The sense of incongruity at the time of lengthening each sample to the skin (\*\*\*\* etc.) was simultaneously evaluated in accordance with the following error criteria at the time of evaluation of the above-mentioned example 1 of an examination.

<Error criterion> 1 ... Certain 2 [ ... It is certain 3 a little. ] [ ... 4 which can be called neither ] [ ... 5 which is not not much ] [ ... When the average which is not is less than / 1

